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Spionids (Annelida, Polychaeta) Obtained by Dredging from Oshima Strait and Yakiuchi Bay, Amami-Oshima of the Ryukyu Islands

By

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今 島 実*：ドレッヂにより得られた大島海峡と焼内湾
(奄美大島) のスピオ科の多毛類

In July 1989 a survey of benthic polychaetes for the Natural History Research Project of the Japanese Islands by the National Science Museum, Tokyo was carried out in Oshima Strait and Yakiuchi Bay, Amami-Oshima of the Ryukyu Islands. The Ryukyu Islands are influenced by the Kuroshio Current, and have many Indo-Malayan marine elements.

Although many polychaetes were obtained in this survey by dredging from depths ranging from 36 through 70 m, this report deals with spionids only. Until now only one spionid species, *Prionospio (Prionospio) ehlersi*, had been recorded from the area (IMAJIMA, 1990 c). In the present study 9 species and 4 indeterminable species in 6 genera were recognized. The material includes one new species of the genus *Prionospio* (*Prionospio*), and *Prionospio (Prionospio) tridentata* is newly added to the Japanese fauna. Four indeterminable species will be reported later. Locations of the dredging stations are shown in Fig. 1. The bulk of the collection, including type specimens, has been deposited in the National Science Museum, Tokyo.

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Aonides oxycephala (SARS, 1862)

Nerine oxycephala SARS, 1862, p. 64.

Aonides oxycephala: RAMOS, 1976, pp. 11-20, figs. 1-2; IMAJIMA, 1989, pp. 215-217, fig. 2.

Occurrence. Dredge st. 4, in 65 m (5 specimens).

Distribution. Norway, Spain, Australia, Japan; tidelands to 74 m.

Prionospio (Aquilaspio) sexoculata AUGENER, 1918

Prionospio sexoculata AUGENER, 1918, pp. 405-408, pl. 6, fig. 159, 172, text-fig. 52.

Prionospio (Aquilaspio) sexoculata: IMAJIMA, 1990 a, pp. 2-5, fig. 2.

Occurrence. Dredge st. 1, in 58 m (1); st. 2, in 56 m (4); st. 5, in 50 m (1).

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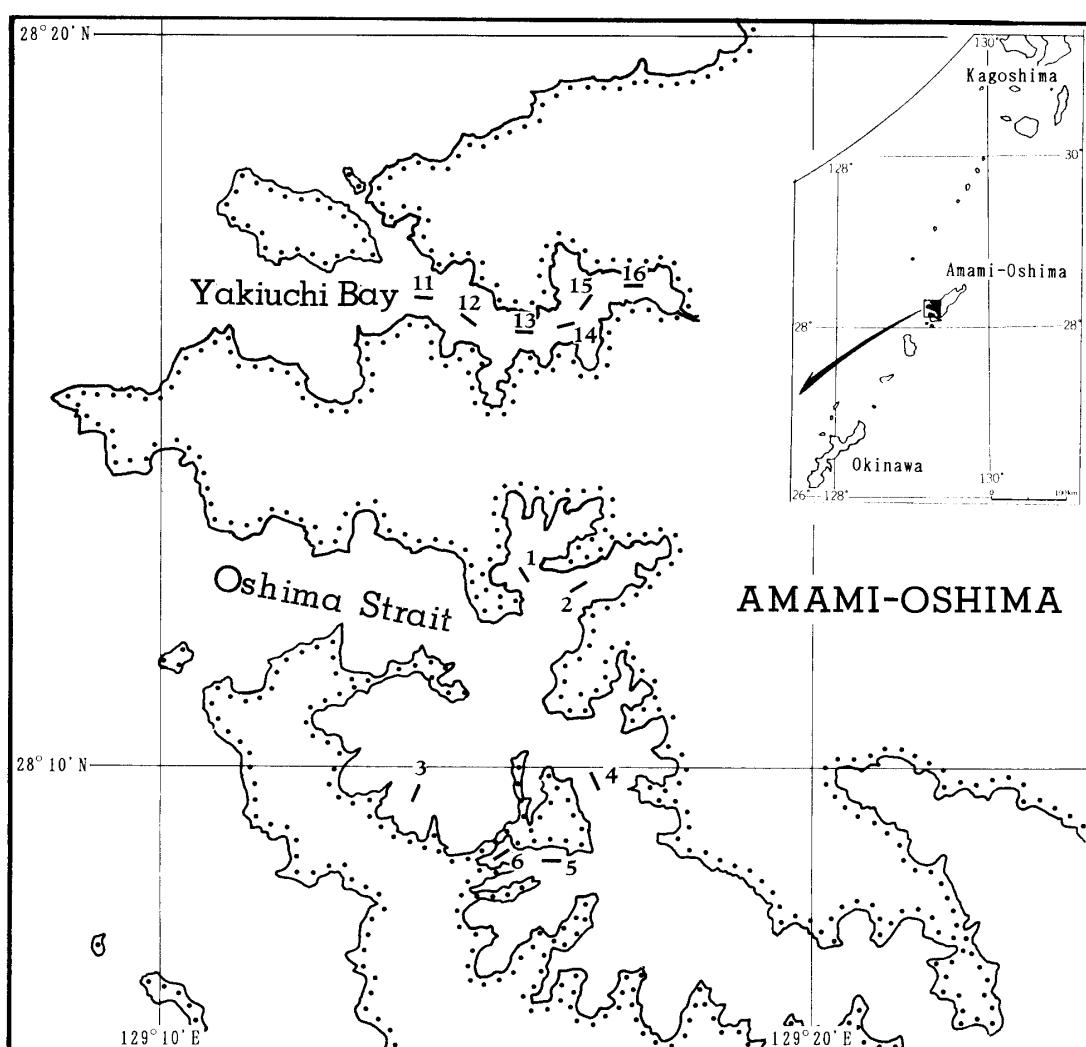


Fig. 1. Map of Oshima Strait and Yakiuchi Bay, showing the positions of dredging stations.

Distribution. South West Africa, Japan; intertidal to 56 m.

Prionospio (Minuspio) elegantula IMAJIMA, 1990.

Prionospio (Minuspio) elegantula IMAJIMA, 1990 b, pp. 65-68, figs. 4, 5.

Occurrence. Dredge st. 12, in 65 m (2); st. 13, in 62 m (1); st. 14, in 50 m (9); st. 15, in 45 m (5); st. 16, in 36 m (8).

Distribution. Japan; 29-101 m.

Prionospio (Minuspio) elongata IMAJAMA, 1990

Prionospio (Minuspio) elongata IMAJIMA, 1990 b, pp. 74-78, figs. 10-12.

Occurrence. Dredge st. 12 (1); st. 13 (1); st. 14 (1).

Distribution. Japan; 34-145 m.

Prionospio (Prionospio) ehlersi FAUVEL, 1928

Prionospio ehlersi FAUVEL, 1928, pp. 10–11, fig. 1 a–e.

Prionospio (Prionospio) ehlersi : IMAJIMA, 1990 c, pp. 106–111, figs. 2, 3.

Occurrence. Dredge st. 2 (3); st. 3, in 62 m (2); st. 5 (1); st. 11, in 70 m (3); st. 12 (2); st. 13 (4); st. 14 (5); st. 15 (9); st. 16 (23).

Distribution. Morocco, Mediterranean Sea, Australia, Solomon Islands, SW Africa, New England, off Western Mexico, Bay of Biscay, Surinam, Japan; 2–1, 700 m.

Prionospio (Prionospio) dubia DAY, 1961

Prionospio malmgreni var. *dubia* DAY, 1961, pp. 489–490, fig. 3 j–n.

Prionospio (Prionospio) dubia: MACIOLEK, 1985, pp. 336–339, figs. 2, 3; IMAJIMA, 1990 c, pp. 118–122, figs. 8, 9.

Occurrence. Dredge st. 1 (13); st. 2 (3); st. 5 (3).

Distribution. South Africa, N. Carolina, Mediterranean Sea, Sweden, Japan; 17–2, 379 m.

Prionospio (Prionospio) depauperata IMAJIMA, 1990

Prionospio (Prionospio) depauperata IMAJIMA, 1990 c, pp. 114–118, figs. 6, 7.

Occurrence. Dredge st. 1 (34); st. 2 (27); st. 4 (2); st. 5 (63); st. 11 (1); st. 12 (3).

Distribution. Japan; 8–850 m.

Prionospio (Prionospio) tridentata BLAKE & KUDENOV, 1978
(Fig. 2 a–e)

Prionospio (Prionospio) tridentata BLAKE & KUDENOV, 1978, p. 219, fig. 23.

Occurrence. Dredge st. 1 (4); st. 5 (4).

Description. All specimens missing posterior ends; largest incomplete with 28 setigers, measuring 6 mm in length and about 0.6 mm in width including parapodia.

Prostomium subtriangular, broadly flared anteriorly with median indentation, tapering posteriorly, with caruncle extending to base of setiger 1; two pairs of eyes present, posterior pair very large (Fig. 2 a). Peristomium dorsally fused to setiger 1, not forming lateral wings.

Branchiae present on setigers 2–5; pairs 1–3 apinnate, elongate, heavily ciliated (Fig. 2 b); pair 4 pinnate, with numerous digitiform pinnules irregularly arranged on posterior face (Fig. 2 c).

Setiger 1 well-developed, with noto- and neuropodial lamellae and setae. Notopodial postsetal lamellae largest in branchial region, lamellae triangular; neuropodial lamellae lanceolate (Fig. 2 b, c). Notopodial lamellae of setiger 7 connected in well-developed dorsal crest (Fig. 2 a). Following notopodial lamellae gradually decreasing in size, not forming crests.

Anterior setae all heavily granulated capillaries with wide sheath, arranged in two rows; capillaries of posterior setigers thinner, with narrow sheath. Ventral sabre setae beginning on neuropodial setiger 11, numbering one per fascicle, each seta exhibiting distinct granulations and wide limbation (Fig. 2 d). Neuropodial hooded hooks from setiger 17–18, numbering up to eight per fascicle; hooks tridentate, with two small teeth above main fang, secondary hood small (Fig. 2 e).

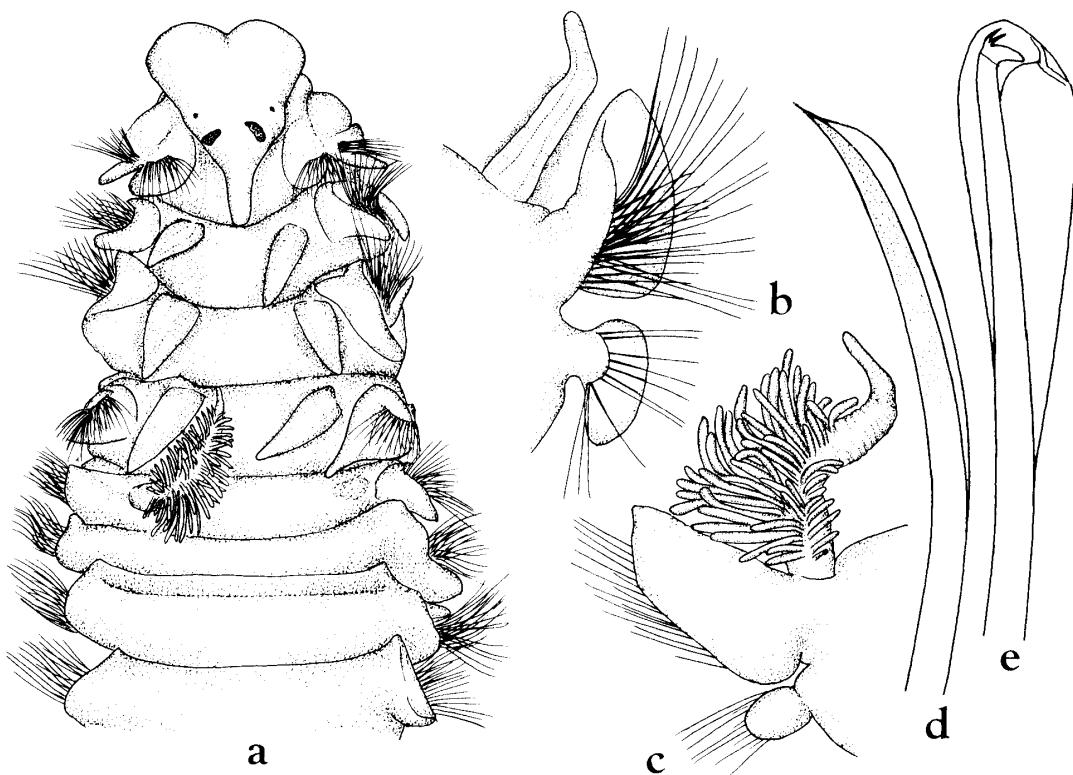


Fig. 2. *Prionospio (Prionospio) tridentata* BLAKE & KUDENOV. —a, Anterior end, dorsal view, x 74; b, second parapodium with branchia (first branchial segment), anterior view, x 122; c, fifth parapodium with branchia, posterior view, x 88; d, ventral sabre seta, x 750; e, neuropodial hooded hook, x 1,170.

Remarks. *Prionospio (Prionospio) tridentata* is clearly related to *P. (P.) caspersi* LAUBIER, 1962 from the Adriatic in the arrangement of pinnate and apinnate branchiae and in the occurrence of a well-developed dorsal crest on setiger 7. However, *Prionospio (Prionospio) tridentata* is distinguishable from *P. caspersi* in having tridentate hooded hooks rather than bidentate, and in having a bilobed prostomium rather than entire.

The species is new to the Japanese fauna.

Distribution. New South Wales, Japan; -58 m.

Prionospio (Prionospio) oshimensis sp. nov.
(Fig. 3 a-l)

Occurrence. Dredge st. 5 (holotype and 1 paratype).

Description. Both specimens missing posterior ends. Holotype with 38 setigers, measuring 9 mm in length and 0.8 mm in width at anterior region including parapodia. Body slender, subcylindrical.

Prostomium subrectangular, anteriorly rounded, tapered posteriorly, with blunt caruncle extending posteriorly to base of setiger 1; distinctive oval, brown pigmented patch present both dorsally and ventrally, additional dark pigment on caruncle, but most of basal part covering by elliptical, opaque membrane (Fig. 3 a-c); eyes absent. Peristomium fused dorsally with setiger

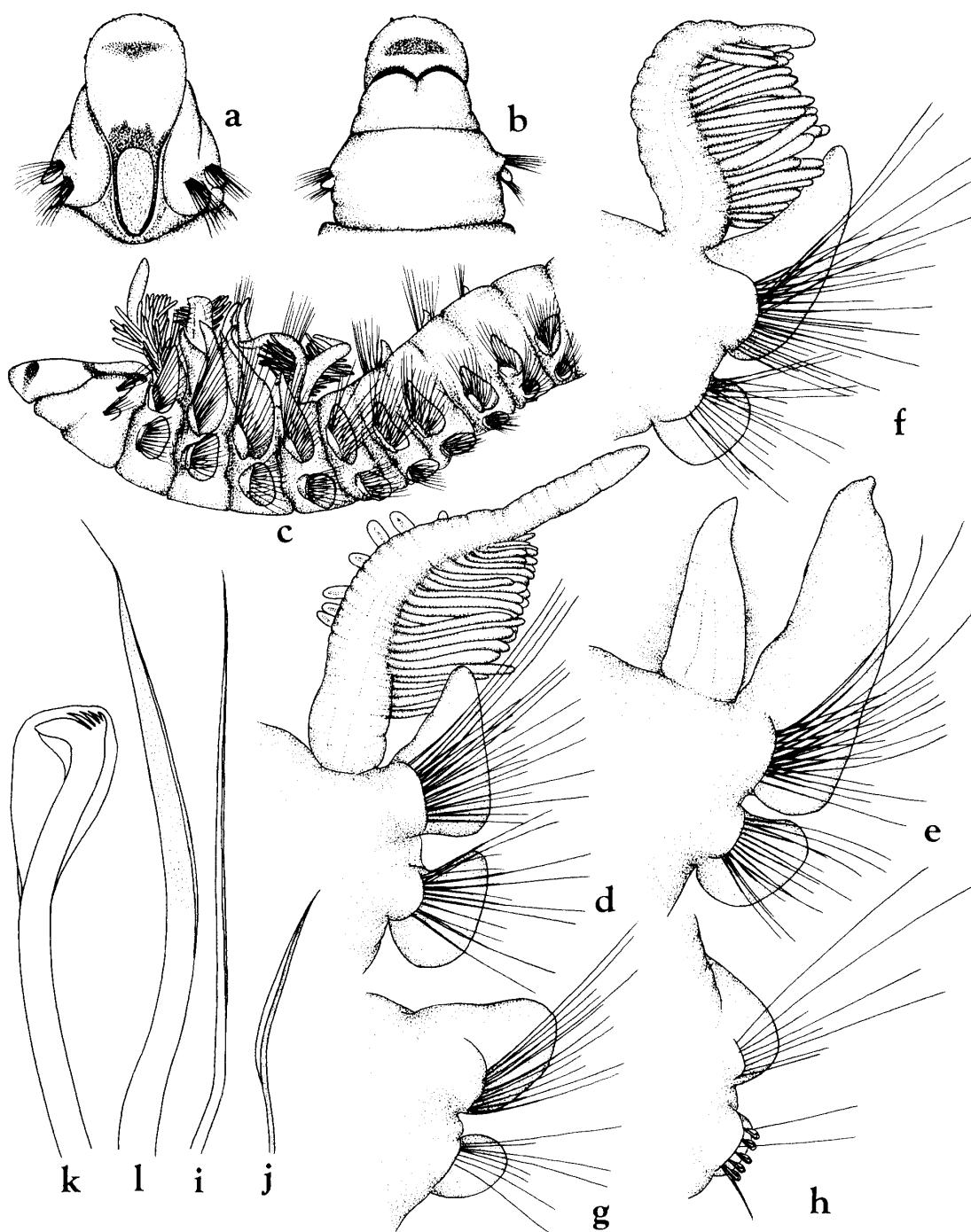


Fig. 3. *Prionospio (Prionospio) oshimensis* sp. nov. —a, b, Prostomium and setiger 1, dorsal (a) and ventral (b) views, $\times 58$; c, anterior end of holotype, lateral view, $\times 36$; d, second parapodium with branchia (first branchial segment), anterior view, $\times 82$; e, fourth parapodium with branchia, anterior view, $\times 82$; f, fifth parapodium with branchia, anterior view, $\times 82$; g, 13th parapodium, anterior view, $\times 82$; h, 30th parapodium, anterior view, $\times 82$; i, j, notopodial setae from anterior parapodium, $\times 168$; k, neuropodial hooded hook, $\times 840$; l, ventral sabre seta, $\times 540$.

1, forming moderate lateral wings (Fig. 3 c).

Branchiae numbering four pairs, on setigers 2–5; pairs 1 and 4 with long digitiform pinnules on posterior face, pinnules not extending to tip of branchia (Fig. 3 d, f); pairs 2 and 3 apinnate, subtriangular, heavily ciliated (Fig. 3 e).

Setiger 1 reduced, with noto- and neuropodial lamellae smaller than on subsequent setigers; notopodial lamellae foliaceous, largest in branchial region (Fig. 3 d–f); lamellae smaller, lower posteriorly (Fig. 3 g, h). Neuropodial lamellae largest in branchial region, squarish anteriorly (Fig. 3 d–f), rounded, lower, broad-based posteriorly (Fig. 3 h). No membranous dorsal crests. Interparapodial pouches lacking.

Anterior noto- and neuropodial setae all moderately granulated capillaries, with clear, narrow sheaths; setae arranged in two rows, with anterior row shorter than posterior row (Fig. 3 i, j); capillaries of posterior setigers striated, lightly granulated, narrowly sheathed. Neuropodial hooded hooks from setiger 17, numbering up to seven per fascicle, accompanied by a few slender capillaries; hooks small, with four pairs of small teeth above main fang, secondary hood small (Fig. 3 k); notopodial hooks unknown. Ventral sabre setae from neuropodial setiger 16 (setiger 15 in paratype), numbering one per fascicle; each seta lightly granulated, with long distal filament (Fig. 3 l).

Pygidium unknown.

Remarks. *Prionospio* (*Prionospio*) *oshimensis* is distinguishable from other species of the genus in that the prostomium and caruncle have characteristic pigmented patches and an opaque membrane.

Type-series. Holotype, NSMT-Pol. H 318; 1 paratype, NSMT-Pol. P 319.

Distribution. Japan; 50–58 m.

Paraprionospio sp.

Occurrence. Dredge st. 15 (3); st. 16 (2).

Scolelepis sp.

Occurrence. Dredge st. 2 (1); st. 4 (2); st. 5 (1); st. 13 (1).

Laonice sp.

Occurrence. Dredge st. 4 (1); st. 5 (2).

Spiophanes sp.

Occurrence. Dredge st. 1 (5); st. 2 (1); st. 5 (2).

要 約

国立科学博物館の「日本列島の自然史科学的総合研究」の一環として、1989年7月に奄美大島の大島海峡と焼内湾でドレッヂによる多毛類の調査を行った。多数個体の多毛類が得られたが、スピオ科 (Spionidae) の種類が研究された。スピオ科の種類のなかには有用貝の貝殻中に穿孔して遂には貝を殺してしまうものや、海洋汚染の指標種になっているものもあって、注目されている科である。

本調査でスピオ科は9種と未確定種4種が見出された。現在までに奄美大島からスピオ科の種類は *Prionospio* (*Prionospio*) *ehlersi* のみが報告されていたが、この研究で8種が追加され、それらのなかに

1新種 *Prionospio (Prionospio) oshimensis* と1日本新記録種 *Prionospio (Prionospio) tridentata* が含まれている。有用貝殻中に穿孔して有害虫とされる *Polydora*-group の種はドレッヂによる試料からは見出されなかった。

大島海峡は奄美大島と加計呂麻島との間の海峡で水通しが良いのに対し、焼内湾は奄美大島の西側に約 12 km にわたって深く入り込み、湾奥には川内川、その他の川からの陸水が流入している。大島海峡と焼内湾から見出された種類を比較すると次のようになる。両海域に見られる種は *Prionospio (Prionospio) ehlersi*, *P. (P.) depauperata*, *Scolelepis* sp., 大島海峡のみから見出される種は *Aonides oxycephala*, *Prionospio (Aquilaspio) sexoculata*, *P. (Prionospio) tridentata*, *P. (P.) dubia*, *P. (P.) oshimensis*, *Laonice* sp., *Spiophanes* sp., 焼内湾からのみ見出される種は *Prionospio (Minuspio) elegantula*, *P. (M.) elongata*, *Parapriionospio* sp. であった。*Parapriionospio* sp. は焼内湾奥の Sts. 15, 16 からのみ見出され、水質を良く反映している。

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